A REPORT TO THE
SAN FRANCISCO CITY-WIDE JOINT FREEWAY STUDY
ON THE
HOUSING AND REPLACEMENT STUDY
ASSOCIATED WITH
THE PANHANDLE AND GOLDEN GATE FREEWAYS

FEBRUARY 1966

APPENDIX 5/2

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A REPORT TO THE
SAN FRANCISCO CITY - STATE JOINT FREEWAY STUDY
ON THE
HOUSING AND REPLACEMENT STUDY
ASSOCIATED WITH
THE PANHANDLE AND GOLDEN GATE FREEWAYS

ARCHITECTURAL DESIGN REPORT

PREPARED BY

BURGER & COPLANS, AIA Architects & Planners

Consultants:

Donald P. Reay, AIA	Consulting Architect
Eric Elsesser	Structural Engineer
Walter W. Soroka, Sc. D.	Acoustics Consultant

Architectural Study Work Performed Under Subcontract with Hal Dunleavy Associates, Prime Study Contractor Under San Francisco Department of Public Works Contract Number 71672, No. 102

February 1966

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A Report to the San
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1966.

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The following report is the result of an architectural and engineering study of the use of land and air rights provided in freeway rights-of-way to replace dwellings removed by freeway construction in the Panhandle and Golden Gate Freeway Corridors, San Francisco, California. The work was done under contract with Hal Dunleavy Associates, prime contractor with the City of San Francisco on a housing replacement study portion of a city-state joint freeway study.

The finding of this study is that the housing supply can be replaced and possibly increased by using freeway air rights.

The Division of Highways may dispose of lands and air rights at nominal cost through appraisal based on the intended low and moderate cost housing use.

The Redevelopment Agency may declare an air rights development as a Project Area, and obtain the usual two-thirds Federal participation in the cost of preparing the base structures necessary for the construction of housing for persons and families having low and moderate incomes. Having constructed the base structures and other improvements, the Redevelopment Agency may then market the sites created at a comparable price to other conventional project sites for low and moderate cost housing.

This architectural study report is confined to three general areas along proposed freeway routes:

1. The Panhandle Corridor from the Fillmore Hill Area to the Panhandle Park, between Oak and Fell Streets;

2. The Golden Gate Corridor between Columbus and Van Ness Avenues, between North Point and Bay Streets; and

3. The Golden Gate Corridor in the vicinity of Telegraph Hill, from Green Street to Grant Avenue.

PANHANDLE ROUTE

SITE PLAN

The architectural solution to the twin problems of providing replacements for housing removed by freeway construction, and of providing a method of reducing the audial, visual and atmospheric disturbances of a freeway which penetrates an established residential neighborhood, is demonstrated by the site plan on the facing page and the sections and sketches which follow.

The freeway is depressed so that it passes beneath the local street system. It is hidden from view with shaped concrete walls, the exterior of which are coverered with new housing. The walls slope inward over the freeway to provide a base for the housing construction. Economical wood frame construction can be used for the residences since the vertical dimension through the frame structure is at no point greater than three floors. Above the freeway is an open slot 90 feet wide which parallels the direction of traffic flow and provides light and ventilation to the freeway and permits noise and fumes to escape upward and away from the residences.

The dwellings are provided with private outdoor terraces and are reached by elevators from covered parking garages below.

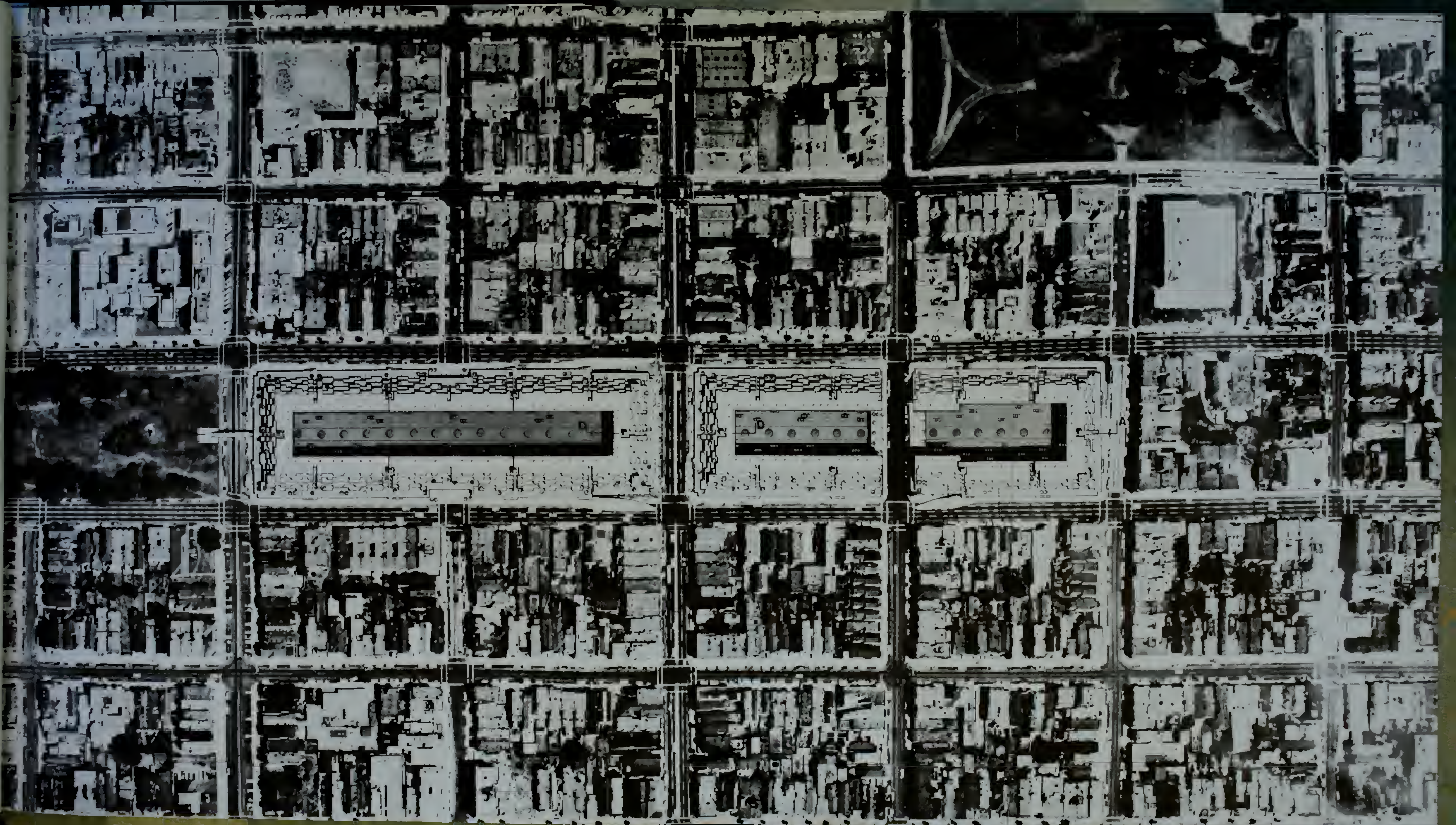
Dr. Walter W. Soroka, Acoustics Consultant, from his analysis of the plans for the depressed freeways shielded by tall concrete walls from adjoining residential structures, advises that the traffic noise problem is likely to be reduced relative to these residences over that which now exists in the area of the proposed freeway.

The proposed freeway housing scheme is estimated to produce approximately the following numbers of dwelling units for low and moderate cost housing:

Panhandle Area without Bored Tunnel - 1050 dwellings with 1 to 1 parking

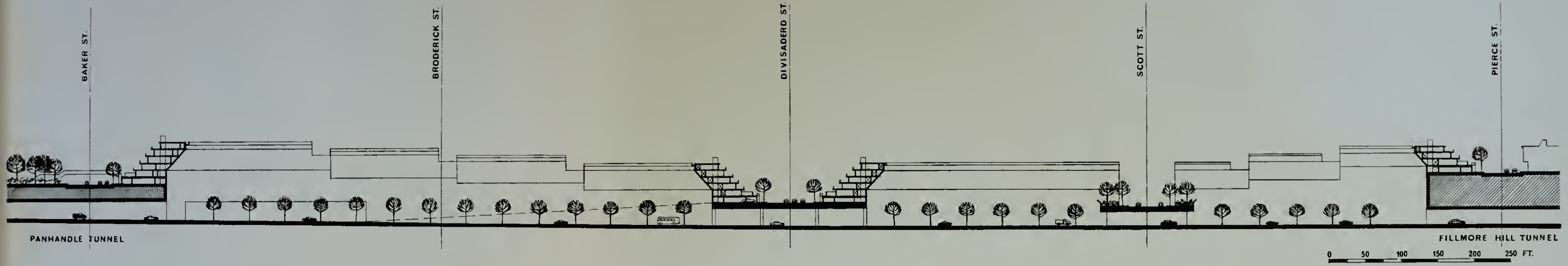
Panhandle Area with Bored Tunnel - 515 dwellings with 1 to 1 parking

The cost of the shield walls and parking structure is estimated at approximately $1300 per linear foot for each side of the freeway, or a total cost of approximately $1,000,000 for a standard city block.


D
D
B
A

PANHANDLE ROUTE

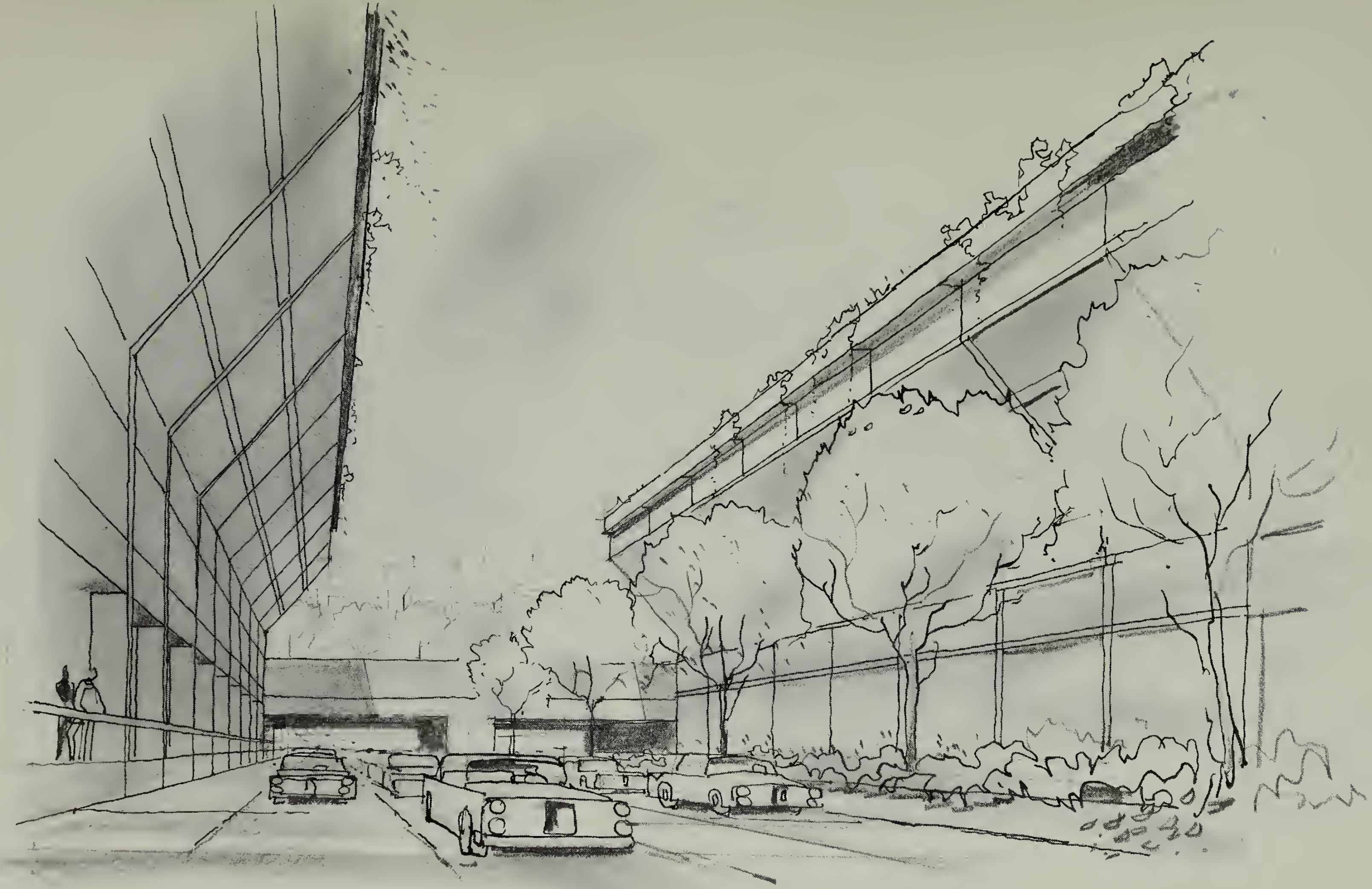
LONGITUDINAL SECTION FROM FILMORE HILL TUNNEL PORTAL AT PIERCE STREET TO PANHANDLE PARK TUNNEL PORTAL AT BAKER ST.


BAKER ST.
BRODERICK ST.
DIVISADERO ST.
SCOTT ST.
PIERCE ST.
PANHANDLE TUNNEL
FILLMORE HILL TUNNEL
0
50
100
150
200
250 FT.

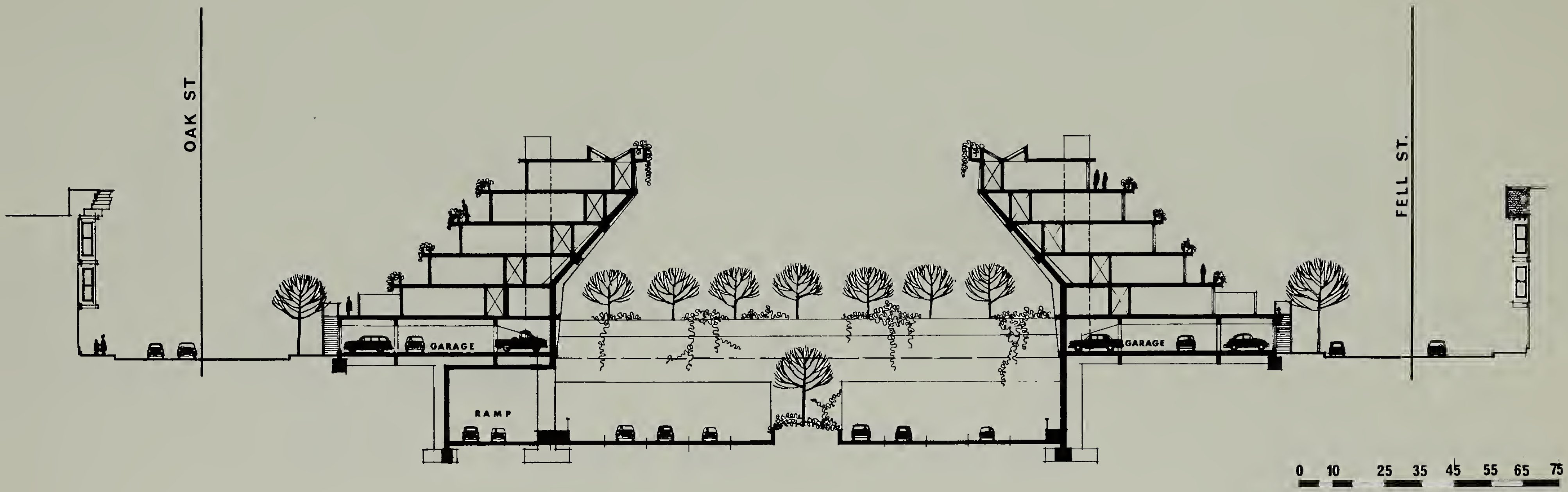
SECTION A-A

PANHANDLE ROUTE

VIEW FROM DEPRESSED FREEWAY LOOKING TOWARD SCOTT STREET. CONCRETE SHIELD WALLS USE ON EITHER SIDE , WHICH SUPPORT HOUSING STRUCTURES AND CHANNEL THE NOISE AND FUMES UPWARD.

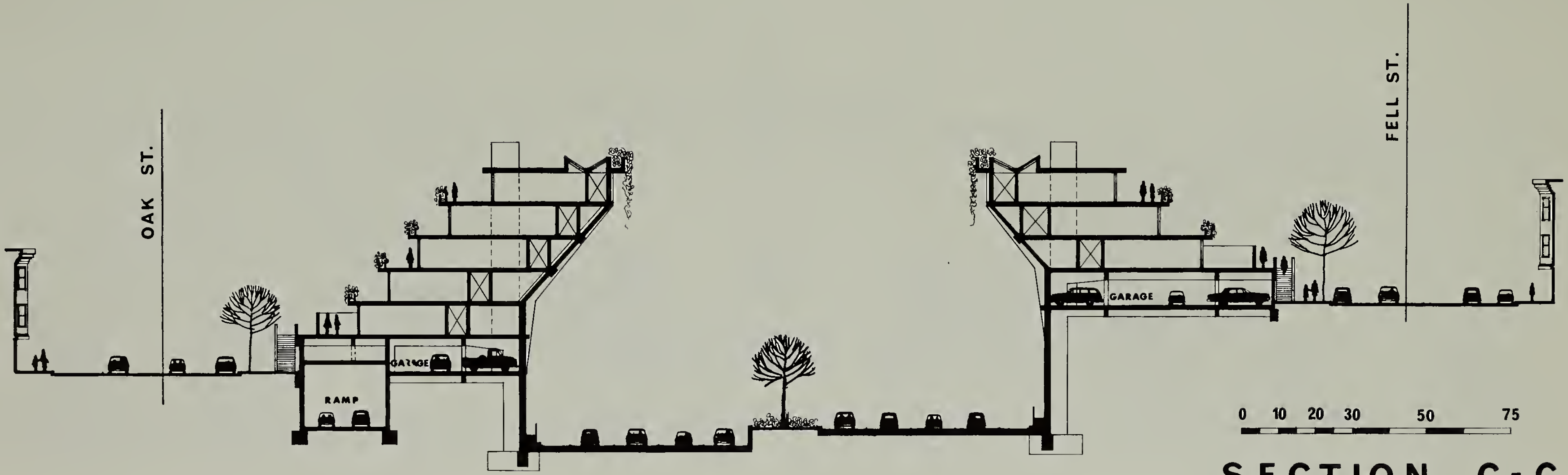


PANHANDLE ROUTE
LATERAL SECTION SHOWING CANTILEVERED SHIELD WALLS SUPPORTING HOUSING STRUCTURES WITH PARKING GARAGES ACCESSIBLE FROM OAK AND FELL STREETS.



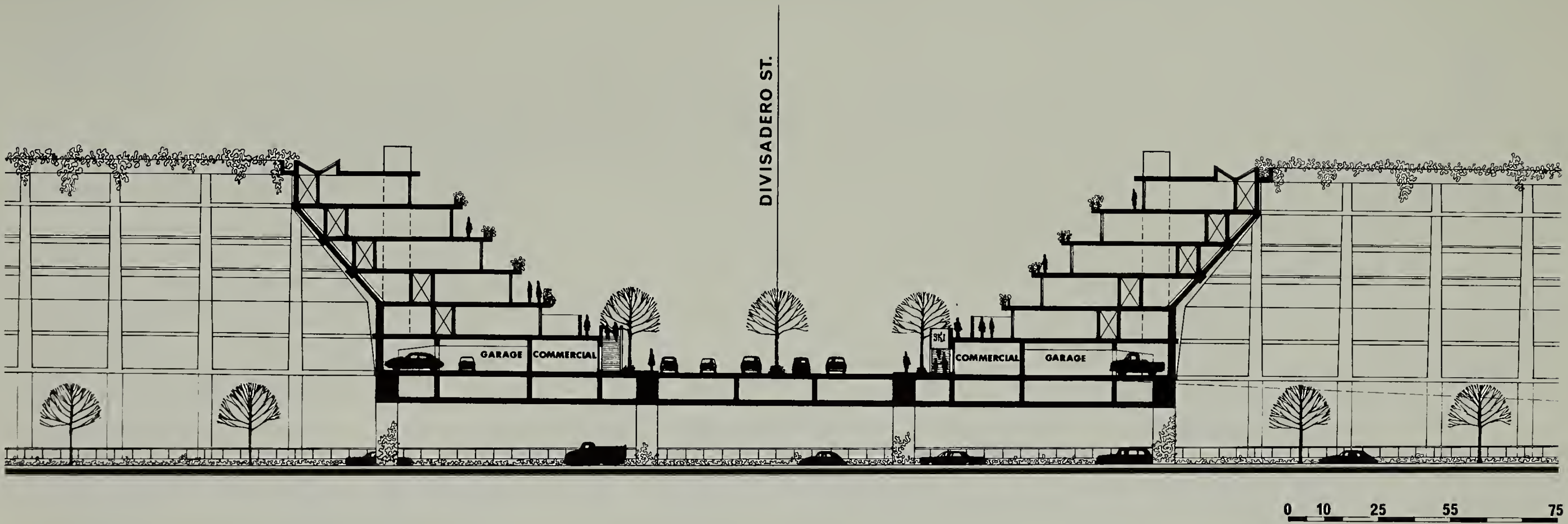
SECTION B-B

PANHANDLE ROUTE
LATERAL SECTION BETWEEN OAK AND FELL STREETS.



SECTION C-C

PANHANDLE ROUTE
SECTION THRU DIVISADERO STREET SHOWING HOUSING,
PARKING AND COMMERCIAL DEVELOPMENT.


DIVISADERO ST.
GARAGE
COMMERCIAL
SKI
COMMERCIAL
GARAGE
0
10
25
55
75

SECTION D-D

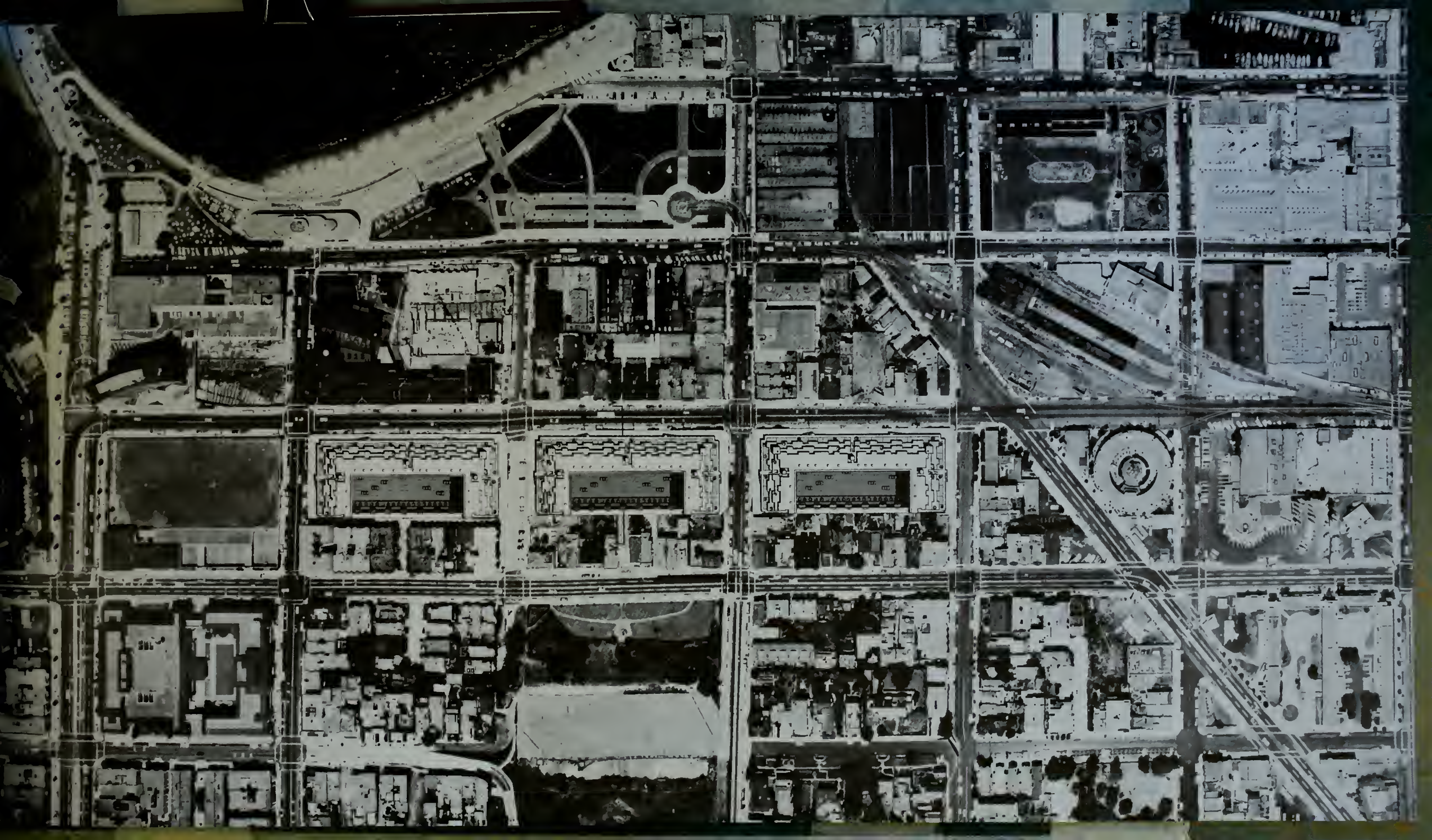
PANHANDLE ROUTE
VIEW OF NEW HOUSING LOOKING EAST ON FELL STREET
TOWARD DIVISADERO STREET.

Jones

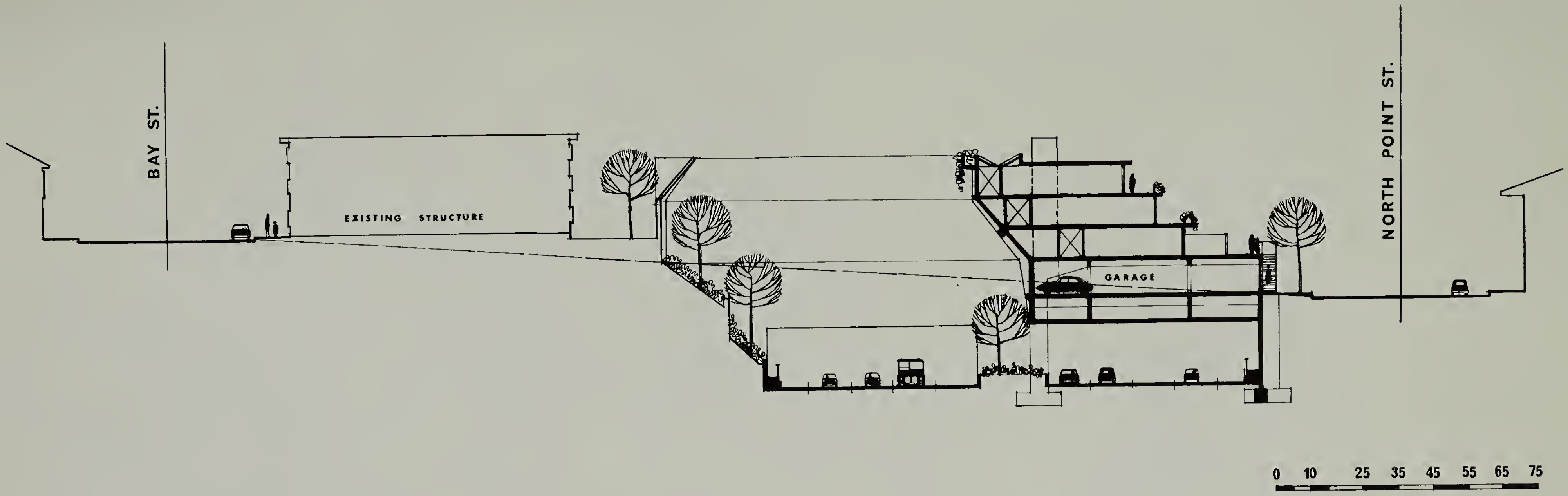
GOLDEN GATE ROUTE - COLUMBUS AVE. TO POLK STREET

SITE PLAN

In the area between Columbus Avenue and Polk Street, between Bay and North Point Streets, replacement housing is provided by utilizing the concrete shield wall system previously described, modified so that new construction occurs on two-thirds of the area, and existing structures are retained along Bay Street on the remaining area. Noise and fumes are dissipated into the air, and the surrounding residences are protected by concrete shields. The scale of the structures is consistent with that of the adjacent buildings, and the 40 foot height limit has been observed. Adequate off-street parking for residences is accommodated. Visual relief is provided for the freeway driver by means of planted earth slopes held by low retaining walls along one side of the roadbed and additional planting in the median strip. It is estimated that in this three block area 210 new dwellings can be built with 1 to 1 covered parking.



GOLDEN GATE ROUTE
LATERAL SECTION BETWEEN BAY AND NORTH POINT STREETS
SHOWING RELATIONSHIP OF FREEWAY TO NEW PARKING AND
HOUSING AND EXISTING DWELLINGS THAT ARE RETAINED.


BAY ST.
EXISTING STRUCTURE
GARAGE
NORTH POINT ST.

SECTION Y - Y

GOLDEN GATE ROUTE - TELEGRAPH HILL AREA

SITE PLAN

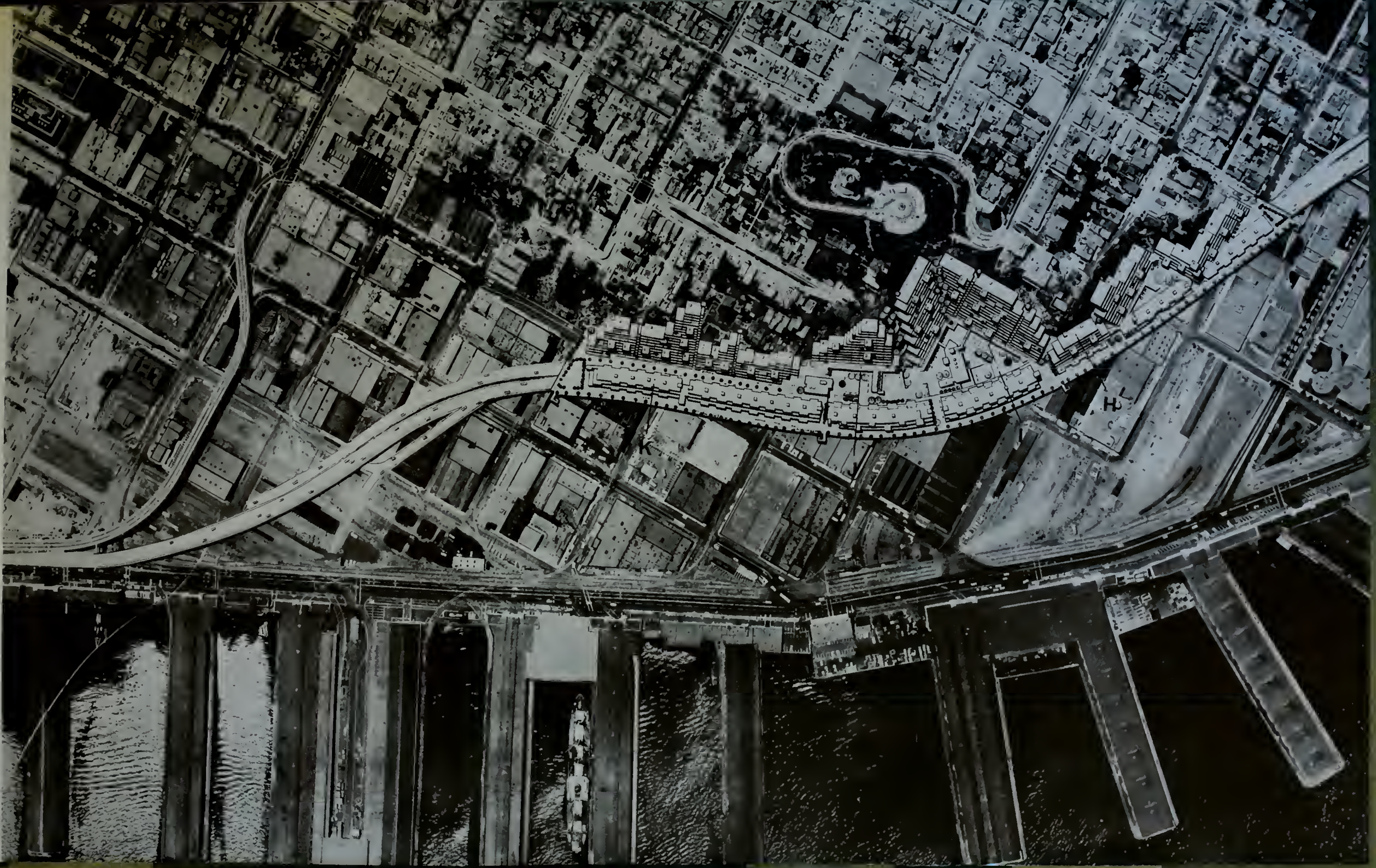
In the area around Telegraph Hill, it has been assumed that a freeway with four elevated lanes above and four depressed lanes below the surface street system, is to be built. To protect the present residents of Telegraph Hill from disturbing sound and fumes, it is proposed that the freeway be covered on the top and side facing the hill with concrete shield walls leaving the Bay side of the freeway structure open so that the driver has a spectacular view. The space between the freeway and Telegraph Hill becomes a parking structure with plazas on its roof. From this plaza, residential structures terrace up the face of Telegraph Hill with sweeping views of the Bay.

Commercial and community buildings terrace over the top of the freeway and open on one side upon the plazas and on the other upon a promenade toward the Bay.

An estimate of the approximate areas that would result from this type of development is as follows:

Housing	883,650 square feet
Commercial	358,400 square feet
Parking	558,100 square feet
Plaza	154,525 square feet

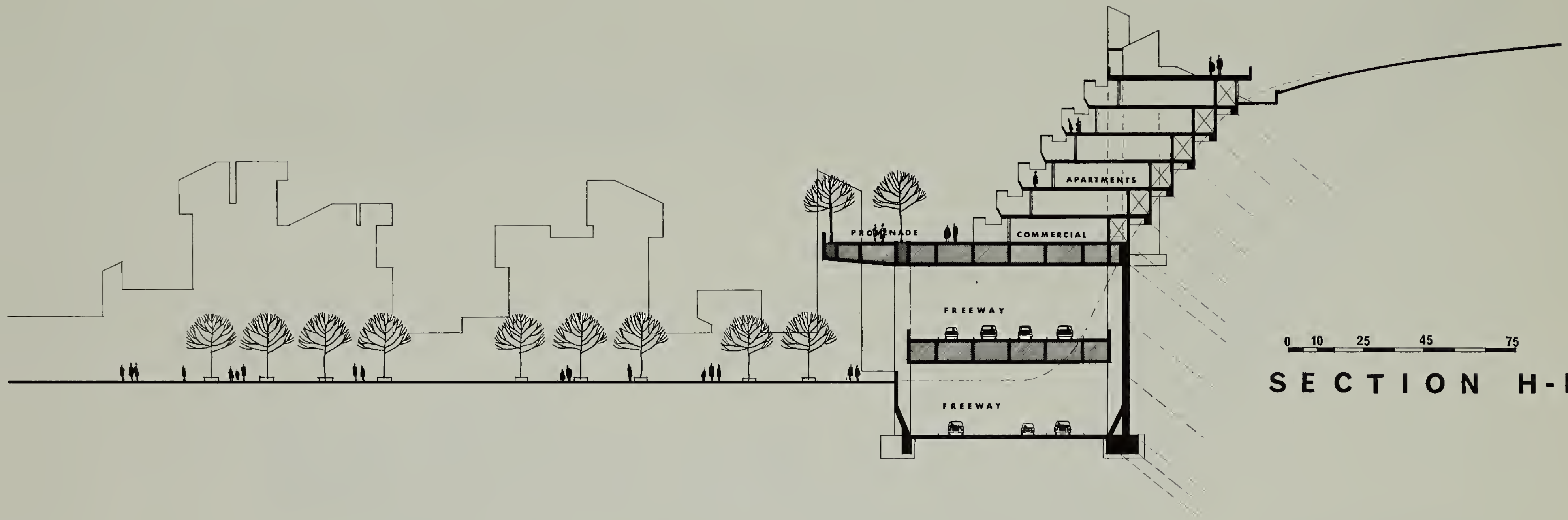
These areas would allow for the construction of approximately 1000 apartments and provide space for 1600 cars. The excess parking spaces could be used in conjunction with the commercial facilities or to relieve the parking problem in the Telegraph Hill area.


K
H

GOLDEN GATE ROUTE

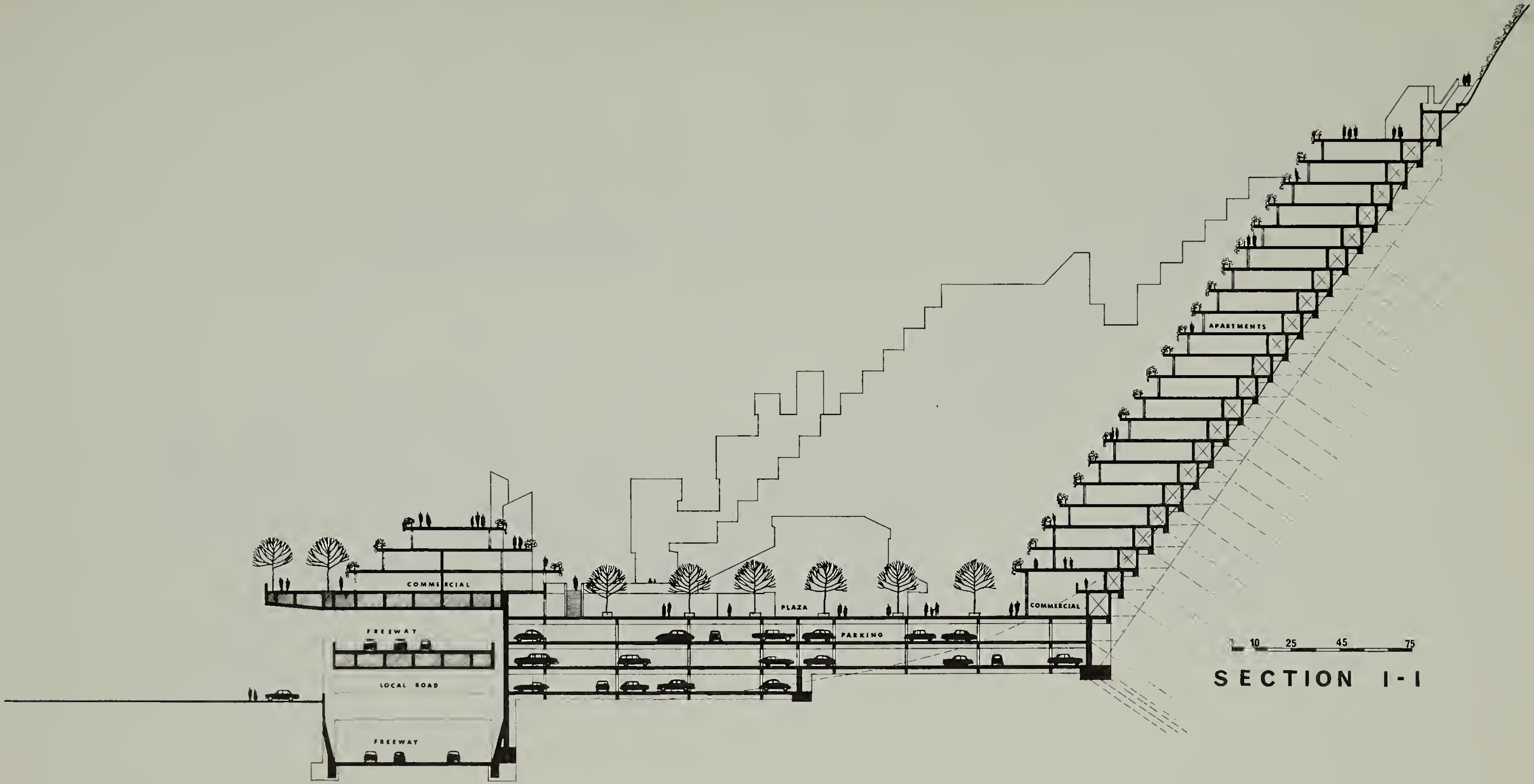
VIEW OF TELEGRAPH HILL SHOWING NEW HOUSING AND COMMERCIAL DEVELOPMENT OVER PROPOSED NEW FREEWAY.

GOLDEN GATE ROUTE
LATERAL SECTION SHOWING DISPOSITION OF COMMERCIAL,
PARKING AND RESIDENTIAL STRUCTURES BUILT OVER THE
PROPOSED FREEWAY AND UP THE FACE OF TELEGRAPH HILL.


APARTMENTS
PROMENADE
COMMERCIAL
FREEWAY
FREEWAY
0
10
25
45
75

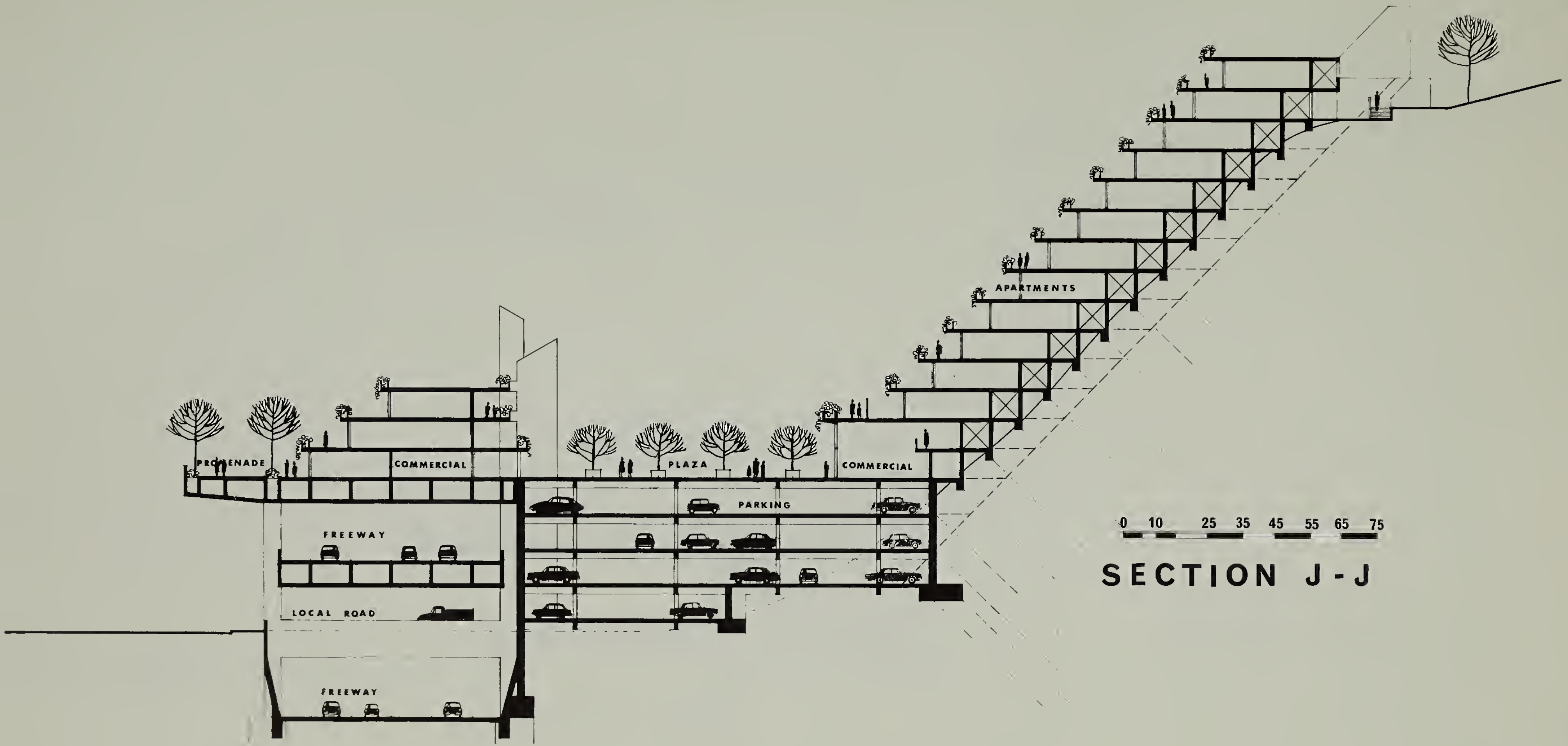
SECTION H-H

GOLDEN GATE ROUTE
LATERAL SECTION AT TELEGRAPH HILL.


APARTMENTS
COMMERCIAL
COMMERCIAL
PLAZA
PARKING
FREEWAY
LOCAL ROAD
FREEWAY
10
25
45
75

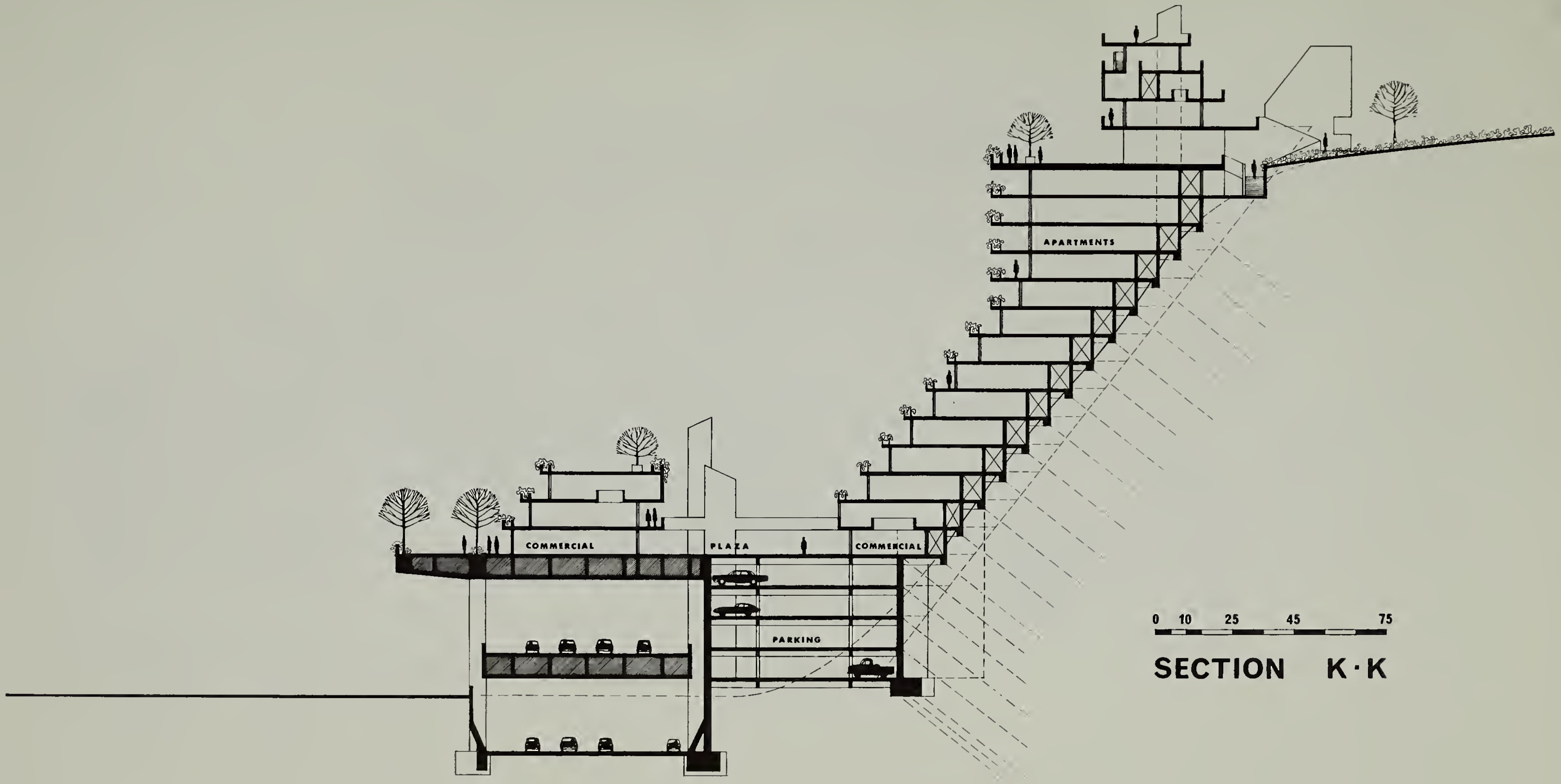
SECTION I-I

GOLDEN GATE ROUTE
LATERAL SECTION AT TELEGRAPH HILL.


PROMENADE
COMMERCIAL
FREEWAY
LOCAL ROAD
FREEWAY
PLAZA
PARKING
COMMERCIAL
APARTMENTS
0 10 25 35 45 55 65 75

SECTION J-J

GOLDEN GATE ROUTE
LATERAL SECTION AT TELEGRAPH HILL.


APARTMENTS
COMMERCIAL
PLAZA
COMMERCIAL
PARKING
0
10
25
45
75

SECTION K·K

GOLDEN GATE ROUTE
TELEGRAPH HILL AREA

VIEW OF COMMERCIAL FACILITIES WITH PEDESTRIAN PROMENADE SEPARATED FROM TERRACED HOUSING ON THE FACE OF THE HILL BY A PUBLIC LANDSCAPED PLAZA OVER THE PARKING GARAGE STRUCTURES.